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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
MERCADO, JULIAN A				
ART UNIT		PAPER NUMBER		
1795				
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11/28/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/828,507

**Applicant(s)**

MURPHY ET AL.

**Examiner**

JULIAN MERCADO

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) 56-73 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date October 17, 2006, December 5, 2005, November 29, 2005 and November 23, 2004
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_



## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 56-73 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on August 12, 2008.

Claims 1-55 are pending for consideration.

### ***Information Disclosure Statement***

The Information Disclosure Statement (IDS) filed on October 17, 2006, December 5, 2005, November 29, 2005 and November 23, 2004 have been considered by the examiner. The examiner notes that the duplicate IDS dated November 29, 2005 has been crossed-out.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 11 and 13-55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "dry" in claims 8, 12, 13, 19, 20, 21, 40 and 43 is a relative term which renders the claim indefinite. The term "dry" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "wet" in claims 10, 11, 39 and 42 is a relative term which renders the claim indefinite. The term "wet" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 14-23, 25-45 and 47-55 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-13, 16-24, 27-32 and 39-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonzalez-Martin et al. (U.S. Pat. 6,149,810).

For claims 1, 2 and 4-12, Gonzalez-Martin et al. teaches providing a membrane and electrode assembly with an electrocatalyst such as lead dioxide in intimate contact with a cation exchange membrane. See col. 21 line 5 et seq. This membrane is in an alkali metal cation form. See col. 14 lines 4-13. This form is during a period without an electrical current passing through the membrane and electrode assembly.

For claims 13, 16-24, 27- 32 and 39-45, and to the extent that this claim is understood for the reasons set forth under 35 U.S.C. 112, second paragraph (discussion above), the membrane is dry insofar as use of its type, i.e. a polymer electrolyte membrane (PEM) is "instead of a liquid electrolyte...." See col. 9 line 17 et seq. The membrane is hydrated and in a sulfonyl fluoride proton form in that it is treated with an acid "to convert it to the proton form for use", and is "allowed to dry for several hours at room temperature." See col. 14 lines 4-31. That the membrane is initially hydrated and subsequently dried is considered to teach a membrane in both a wet and dry state, especially in consideration of the terms wet and dry being terms of degree, e.g. a hydrated membrane is *less* dry while a dehydrated membrane is *more* dry. An electrical current is provided for by the electrolysis reaction of the electrolyzer, i.e. electrolysis cell.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 14, 15, 25 and 26 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gonzalez-Martin et al. (U.S. Pat. 6,149,810).

As to the electrocatalytic activity diminishing, as the membrane and electrode assembly provided for by Gonzalez-Martin et al. is identical to that disclosed and claimed by applicant for the reasons discussed under the 35 U.S.C. 102(b) rejection above, it would naturally flow to have, inherently, the same diminishing electrocatalytic activity as claimed, absent of a showing

by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990)

Claims 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Martin et al. (U.S. Pat. 6,149,810).

As to the hydroxide concentration and its duration of contact, absent of unexpected results it is asserted that these are optimizable parameters for result-effective variables, insofar as directly affecting the conversion of the perfluorinated sulfonic acid from its proton form. See col. 14 line 43 et seq. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

Claims 46-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonzalez-Martin et al. (U.S. Pat. 6,149,810) in view of Nakamatsu et al. (Japanese Publication 06-081183).

The teachings of Gonzalez-Martin et al. are discussed above.

For claim 46, Gonzalez-Martin et al. do not explicitly teach passing electrical current through the membrane and subsequently removing this potential. However, Nakamatsu et al. teach applying a protective voltage to an electrode structural body for a predetermined period. See the Abstract. The skilled artisan would find obvious to modify Gonzalez-Martin et al. by passing a potential through the membrane of and electrode assembly. The motivation for such a modification is to "prevent the lowering in electrolysis efficiency..." and "deterioration of the electrode material...." (ib.)

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. 5,654,109 to Plowman et al. is cited of cumulative relevance in teaching the sodium conversion of an ion exchange membrane. See col. 9 line 63 et seq.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/Julian Mercado/  
Examiner, Art Unit 1795

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795



